Screech Owl Winter Surveys - 2024

Background

In 2014, the Montana Winter Breeding Owl Survey conducted a baseline assessment of twelve owl species listed on the Montana Species of Highest Inventory Need List. Almost a decade later, no further monitoring has been conducted and four species remain on the list: Boreal Owl, Great Gray Owl, Northern Hawk Owl, Western Screech Owl. Both Western and Eastern Screech Owl species are listed as Potential Species of Concern. Due to the discrete habitat needs and early breeding season of the Western and Eastern Screech Owls, this survey aims to conduct a statewide survey following a standard protocol in order to provide a baseline assessment of the status of these species.

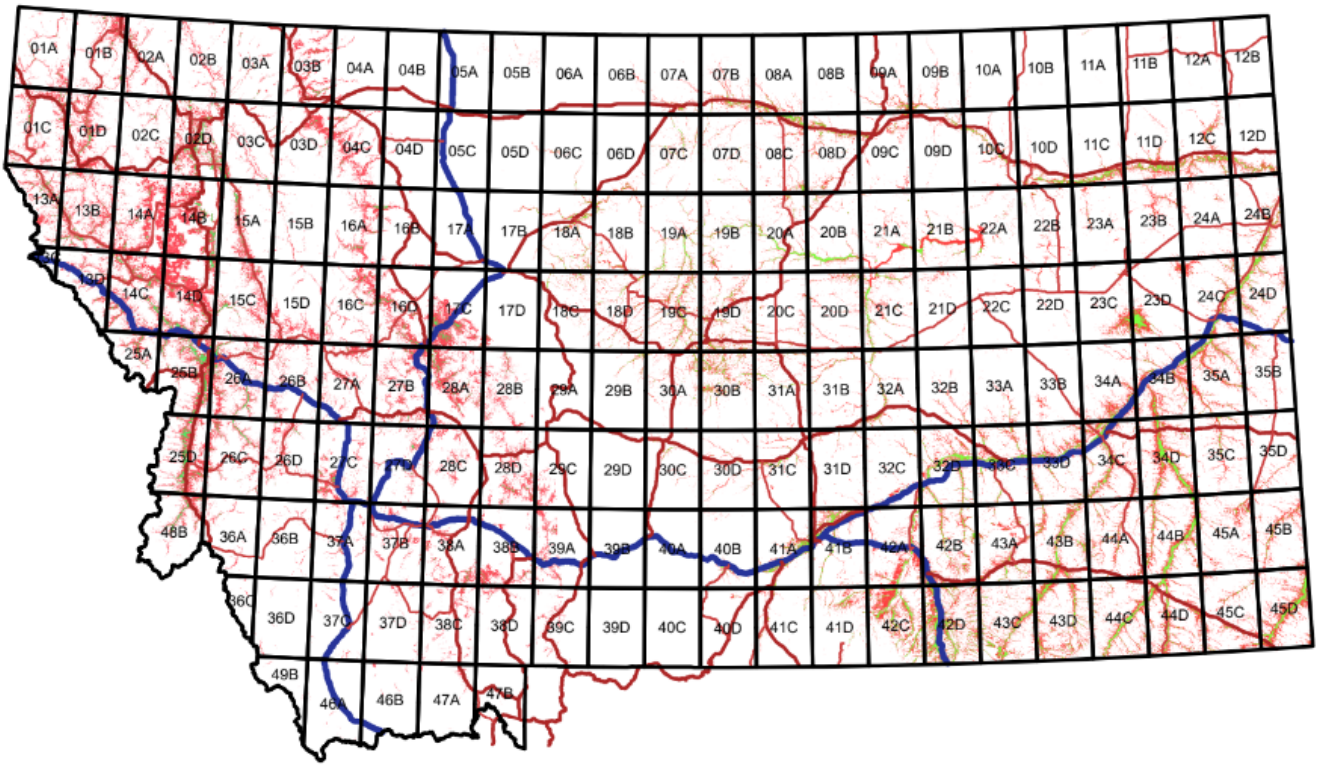
Screech Owl Status and Habitat Overview:

Species	Code	Status	Habitat
Western Screech Owl Eastern Screech Owl	WESO EASO	SOC, G5, S3 G5, S3S4, PSOC	Riparian Floodplain, Mature Black Cottonwood Bottomlands, Margins of Conifer Forests

Owl Vocalization

Surveyors are encouraged to review owl vocalizations for Montana Owls at the Macaulay Library of Sound. Although this survey targets Western and Eastern Screech Owls, familiarization with the vocalizations of other Owl species of Montana may be useful in identifying additional vocalizations of present Owl species during the survey.

Map/Survey Points:



Survey Protocol

The following protocols were modeled after the 2014 Montana Winter Breeding Owl Survey and developed from the North American Guidelines for Nocturnal Owl Monitoring (Takats et al. 2001) and Inventory Methods for Owl Surveys in British Columbia (Hausleitner 2006).

Materials and Equipment

Required

1. GPS and/or Onx Hunt
2. Notebook and pencil (preferably waterproof)
3. Thermometer
4. Audio recording device (i.e., cell phone; useful for recording sounds surveyor is not able to identify in field)
5. Compass for estimating bearing to any animals detected.
6. Maps/Gazetteer
7. Binocular
8. Warm clothes

Beneficial- But Not Required

1. Game Caller or other call playback device capable of broadcasting calls a distance of at least 400-meters, but not greater than 800-meters, as heard by a human.
2. Speakers for cell phone
3. Spotlight

Timing and Conditions for Surveys

Surveyors will begin conducting surveys starting March 1, and will not extend surveys past April 30. Surveyors will begin their routes no earlier than 30 minutes after sunset and will end no later than 30 minutes before sunrise. Surveys should not be conducted during rain or snow storms, conditions of extreme cold, or during high winds (i.e.greater than Beaufort number 3 as described below), all of which would hamper detection of broadcasted calls by animals and detection of calling animals by the surveyor.

Protocol at each Call Station

The starting call station can be chosen by the observer, in any given QLL (quarter-latilong), within moderate/optimal habitat suitability as indicated by the QLL map. Call stations should be spaced at 1 mile intervals along transect routes. If a roadway doubles back on itself and places a call station closer than 0.5 miles straight line distance from another call station, then the call station should be moved down the road far enough to make it greater than 0.5 miles away from the nearest station.

The starting point of the survey is selected by the surveyor. The starting point should be chosen so that 10 callback stations can be spaced 1 mile apart within the QLL square. Each survey cell has an additional map that can be referenced when determining suitable habitat, roadways, and starting point. The latitude and longitude coordinates should be recorded at each callback station.

For the safety of surveyors and other drivers, vehicles participating in the survey must not park or stop on the roadway when conducting the survey. When approaching a call station, be sure to park in a safe location that does not interrupt potential traffic or jeopardize public and personal safety.

After the vehicle has been stopped in a safe location, each stop should consist of 10 minutes of listening and broadcasting as followed:

3 minutes of silent listening
20 seconds of Eastern Screech Owl vocalization
1 minute of silent listening
20 seconds of Western Screech Owl vocalization
4.5 minutes of silent listening

Surveyors can simply listen (for 10 minutes/site), or can broadcast calls via cell phone or a game caller/playback device. Ideally, calls are played at a level that could be heard by humans at a distance of at least 400-meters, but not greater than 800-meters distance. Surveyors may spotlight for Owls that have gone undetected during the end of the listening period.

Data to Record

1. Name of road transect.
2. Description of point sites
3. Moon phase (e.g., portion full ¼, ½, ¾)
4. Date
5. Time
6. Stop Number
7. Latitude and Longitude of each stop, preferably in decimal degrees
8. Brief description of habitat within 400-meters of call station (e.g, cottonwood gallery forest along the Yellowstone River with adjacent agricultural fields).
9. Moon visibility – percent visible on average during entire length of stop
10. Wind on Beaufort scale (see below)
    - 0 = <1mph, smoke rises vertically
    - 1 = 1-3 mph, wind direction shown by smoke drift
    - 2 = 4-7 mph, wind felt on face, leaves rustle
    - 3 = 8-12 mph, leaves, small twigs in constant motion
    - 4 = 13-18 mph, raises dust/loose paper, small branches move
    - 5 = 19-24 mph, small trees in leaf sway
11. Percent of sky with cloud cover
    - 0 = no cloud cover
    - 1 = 1-25% cloud cover
    - 2 = 26-50% cloud cover
    - 3 = 51-75% cloud cover
    - 4 = 76-100% cloud cover
12. Temperature (specify degrees C or F)
13. Noise level (see below)
    - 0=quiet
    - 1=some noise, but not distracting (e.g, dog barking)
    - 2=significant noise that may reduce detectability (e.g., creek)
    - 3=constant noise that severely impairs detectability (e.g., roaring creek, heavy traffic)
14. Species, bearing, and estimated distance to animal detected (e.g., 1 x GHOW @ 120° and 200 meters)